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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/834,141	04/12/2001	Brian Mitchell Bass	RAL920000016US2	1990

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EXAMINER	
PHUNKULH, BOB A	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/834,141	BASS ET AL.	
	Examiner	Art Unit	
	Bob A. Phunkulh	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: correct the subject matter "a system" in lines 6, 8, 10, and 13 to different word. Appropriate correction is required.

Claims 1 is objected to because of the following informalities: correct the subject matter "his" in line 9 to –the user--. Appropriate correction is required.

Claim 2 is objected to because of the following informalities: correct the subject matter "a system" in lines 2-3 to different word. Appropriate correction is required.

Claims 4, 6, 7, and 8, are objected to because of the following informalities: correct the subject matter "a system" in lines 2-3 to different word. Appropriate correction is required.

Claim 18 is objected to because of the following informalities: correct the subject matter "a first calendar" in line 4 and "a second calendar" in line 5 to –the first calendar--; and –the second calendar--, respectively. Appropriate correction is required.

Claim 19 is objected to because of the following informalities: correct the subject matter "comprising:establishing" in line 3 to –comprising—and start with a new

paragraph for "establishing" in order to conform with the rest of the body of the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 10-12, 16 are rejected under 35 U.S.C. 102(b) as being anticiapted by *Pillar* et al. (US 6,438,106), hereinafter *Pillar.*

Regarding claim 1, *Pillar* discloses a system for processing frames and enqueuing the frames on an output where the system serves users having different types of service, the system comprising:

a first calendar for serving users which have a first type of service (*CS0 connection scheduler server*, **see figures 1 and 5 and col. 5 lines 33-35**);

a second calendar for serving users which have a second type of service (*CS1 connection scheduler server*, **see figures 1 and 5 and col. 5 lines 33-35**);

a third calendar for serving users having a third type of service (*CS2 connection scheduler*, **see figures 1 and 5 and col. 5 lines 33-35**);;

a system which places frames in the first calendar when the user has a first type of service (the first calendar is used for scheduling the time sensitive service, see col. 5 lines 25-39);

a system which places frames in the second calendar when the user has a second type of service and is within the limits set by the user level of service (see col. 5 lines 25-39);

a system which places frames in the third calendar when the user has selected that type of service and when the user has selected the second type of service but has exceeded the limits set for the second type of service (non-real-time data, see col. 5 lines 51-54) ; and

a system which removes frames from the calendars according to stored logic.

Regarding claim 2, *Pillar* discloses one type of service is a minimum bandwidth service and the system includes a timer for providing periodic service to a flow which has a minimum bandwidth to allow the minimum bandwidth to be provided (see col. 5 lines 40-43).

Regarding claim 3, *Pillar* discloses when a flow which has minimum bandwidth service exceeds the minimum bandwidth service, the excess of the minimum bandwidth may be handled by another service (any of the CS2-CS7 can handled the service, see col. 44-54).

Regarding claim 10, *Pillar* discloses a method of placing processed frames on an output after processing and establishing and enforcing a system of different types of service levels, the method comprising the steps of:

establishing at least a first and second type of service, with one of the types of service having a limit on the bandwidth which can be used (see col. 5 lines 25-39);

identifying a type of service with each flow of processed frames, and, for a service having a limit on the bandwidth which can be used, the respective limit (col. 5 lines 40-43);

establishing a logical priority in serving the first and second types of service;

allowing service for the higher priority service for a user until the user reaches the limit on the bandwidth which can be used;

serving the service for the lower priority service when service for the higher priority service is not required; and

treating requests for service from the higher priority service which exceed the limit on bandwidth which can be used to be considered as lower priority service requests (see col. 5 lines 40-54).

Regarding claim 11, *Pillar* discloses one type of service is a minimum bandwidth service and the system includes a timer for providing periodic service to a flow which has a minimum bandwidth to allow the minimum bandwidth to be provided (see col. 5 lines 40-43).

Regarding claim 12, *Pillar* discloses establishing a third type of service and allocating a priority to the third type of service (see col. 5 lines 40-43).

Regarding claim 16, *Pillar* discloses the steps of the method further includes establishing a separate calendars for at least two separate types of service (see col. 5 lines 40-43).

Claims 17, 19 are rejected under 35 U.S.C. 102(b) as being anticipated by *Hughes* et al. (US 5835494), hereinafter *Hughes*.

Regarding claim 17, *Hughes* discloses a system for processing frames and enqueuing the frames on an output where the system accommodates flows with different types of service including combinations of different types of service, the system comprising:

a first calendar which supports a first service (virtual connections with faster transfer rates are scheduled using higher granularity calendars, see col. 3 lines 1-8);

a second calendar which supports a second service (virtual connections with slower transfer rates are scheduled using lower granularity calendars, see col. 3 lines 1-8);

logic which schedules frames onto the output from the first calendar and the second calendar, said logic including interaction between said first and second calendars to allow a single flow to be included on both calendars and to determine when the flow is enqueued on the output (a transmission control unit that uses a plurality of

calendars to schedule when each of the plurality of virtual connections will be serviced, see col. 3 lines 1-8).

Regarding claim 19, *Hughes* discloses a method of processing frames and placing the processed frames from a plurality of flows onto an output based upon different types of service levels associated with the flows, the steps of the method comprising:

establishing a first calendar to support a first type of service (virtual connections with faster transfer rates are scheduled using higher granularity calendars, see col. 3 lines 1-8);

establishing a second calendar to support a second type of service (virtual connections with slower transfer rates are scheduled using lower granularity calendars, col. 3 lines 1-8);

determining the types of service which have been selected for a given flow and using the types of service to select the calendars which service the flow (see col. 3 lines 25-33);

using the calendars to determine the order in which processed frames from the flows are placed onto the output (see col. 6 lines 52-67) ; and

allowing a single flow to be placed on the first and second calendar and serviced from both the first and second calendar by using logic to determine when a flow is serviced (see col. 7 lines 1-6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-9, 13-15, are rejected under 35 U.S.C. 103(a) as being unpatentable over *Pillar* in view of *Duffield* et al. (US 6452933), hereinafter *Duffield*.

Regarding claim 4-9, 13-15, *Pillar* fails to explicitly discloses the service provides for a weighted fair queuing and the system includes a mechanism which determines the priority in the calendar, the mechanism which determines the priority in the calendar includes a calculation which is based on the length of at least one frame from the flow.

Duffield, on the other hand, discloses the service provides for a weighted fair queuing and the system includes a mechanism which determines the priority in the calendar, the mechanism which determines the priority in the calendar includes a calculation which is based on the length of at least one frame from the flow (see abstract).

Therefore, it would having been obvious to one having ordinary skill in the art at the time of invention was made to provides the WFQ and the mechanism which determines the priority in the calendar includes a calculation which is based on the length of at least one frame from the flow of *Duffield* in the system taught by *Pillar* for the WFQ scheme, provides end-to-end delay guarantees, e.g., each packet is

guaranteed a certain rate for each packet flow in the stream, and, the provision of isolation between streams, e.g., a misbehaving source will not effect the flow of other streams, and when there is underutilization of capacity, e.g., when flow is particularly bursty and there may be idle time, the WFQ system facilitates the redistribution of the unused bandwidth so as to preserve work-conservation property

Claims 18, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hughes* in view of Calvignac et al. (US 5946297), hereinafter Calvignac.

Regarding claim 18, 20, *Hughes* fails to explicitly the types of service include minimum bandwidth and best effort with a calendar to support each type of service and the step of determining the types of service include determining that a given flow has both minimum bandwidth and best effort and places the flow in both the calendar for minimum bandwidth and the calendar for best effort.

Regarding claim 21, *Hughes* fails to explicitly disclose the types of service include minimum bandwidth, best effort, peak and maximum burst size and the services include combinations of these types of service.

Calvingnac, on the other hand, discloses the types of service include minimum bandwidth and best effort with a calendar to support each type of service and the step of determining the types of service include determining that a given flow has both

minimum bandwidth and best effort and places the flow in both the calendar for minimum bandwidth (first scheduler guarantees up to the minimum band with, see col. 3 lines 50-53) and the calendar for best effort (second scheduler or complementary scheduling shares the remaining bandwidth, see col. 3 lines 50-67).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to includes the teaching of Calvingnac in the system taught by *Hughes* in order to provide a scheduling scheme for support of Minimum Service connections such as ABR connections, guaranteeing the minimum usable bandwidth to each connection and a fair share of the remaining bandwidth between these connections.

Conclusion

Any response to this action should be mailed to:

The following address mail to be delivered by the United States Postal Service (USPS) only:

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Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306, (for formal communications intended for entry)

Or:

The following address mail to be delivered by other delivery services (Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, Hand Delivery, etc.) as follow:

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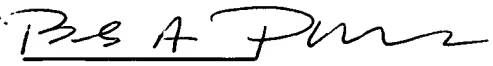
Customer Window, Mail Stop _____
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Bob A. Phunkulh** whose telephone number is **(571) 272-3083.** The examiner can normally be reached on Monday-Tursday from 8:00 A.M. to 5:00 P.M. (first week of the bi-week) and Monday-Friday (for second week of the bi-week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor **Kenneth Vanderpuye**, can be reach on **(571) 272-3078.** The fax phone number for this group is **(703) 872-9306.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bob A. Phunkulh



TC 2600
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BOB PHUNKULH
PRIMARY EXAMINER